



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0085; Directorate Identifier 2000-NE-19-AD; Amendment 39-16897; AD 2011-26-07]

RIN 2120-AA64

Airworthiness Directives; Teledyne Continental Motors (TCM) and Rolls-Royce Motors Ltd. (R-RM) Series Reciprocating Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding an existing airworthiness directive (AD) for certain TCM and R-RM series reciprocating engines. That AD currently requires replacement of certain magnetos if they fall within the specified serial number (S/N) range, inspection of the removed magneto to verify that the stop pin is still in place, and, if the stop pin is not in place, inspection of the engine gear train, crankcase, and accessory case. This new AD corrects the range of S/Ns affected, requires the same replacement and inspections, and adds R-RM C-125, C-145, O-300, IO-360, TSIO-360, and LTSIO-520-AE series reciprocating engines to the applicability. This AD was prompted by our awareness of an error in the previous AD applicability in the range of magneto S/Ns affected and of the need to include certain engines made by R-RM, under license of TCM. We are issuing this AD to prevent engine failure and loss of control of the airplane due to migration of the magneto impulse coupling stop pin out of the magneto frame and into the gear train of the engine.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this AD, contact Teledyne Continental Motors, Inc., PO Box 90, Mobile, AL 36601; phone: 251-438-3411, or go to <http://tcmlink.com/servicebulletins.cfm>. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Juanita Craft, Aerospace Engineer, Atlanta Certification Office, FAA, Small Airplane Directorate, 1701 Columbia Avenue, College Park, Georgia, 30337; phone: 404-474-5584; fax: 404-474-5606; e-mail: juanita.craft@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2002-13-04, amendment 39-12792 (67 FR 43230, June 27, 2002). That AD applies to the specified products. The NPRM published in the Federal Register on June 28, 2011 (76 FR 37682). That NPRM proposed to continue to require replacement of certain magnetos if they fall within the specified S/N range, inspection of the removed magneto to verify that the stop pin is still in place, and, if the stop pin is not in place,

inspection of the engine gear train, crankcase, and accessory case. That NPRM also proposed to correct the range of S/Ns affected and add R-RM C-125, C-145, O-300, IO-360, TSIO-360, and LTSIO-520-AE series reciprocating engines to the applicability. We are issuing this AD to prevent engine failure and loss of control of the airplane due to migration of the magneto impulse coupling stop pin out of the magneto frame and into the gear train of the engine.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comment received on the proposal and the FAA's response to this comment.

Question on Who the AD is Written Against

A commenter, not further identified, asked why the AD was issued against TCM and not "Slick."

We do not agree. We write ADs against either a product or an appliance. In the case of this AD, magnetos are part of the engine type certificate and, therefore, considered part of the product (the engine). We did not change the AD as a result of this comment.

Conclusion

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting the AD as proposed.

Costs of Compliance

We estimate that this AD affects 100 R-RM C-125, C-145, O-300, IO-360, TSIO-360, and LTSIO-520-AE series reciprocating engines installed on airplanes of U.S. registry. We also estimate that it will take about 2 work-hours per engine to perform the inspections, and that the average labor rate is \$85 per work-hour. Based on these figures,

we estimate the total cost of this AD to U.S. operators to be \$17,000. Our cost estimate is exclusive of possible warranty coverage.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2002-13-04, Amendment 39-12792 (67 FR 43230, June 27, 2002), and adding the following new AD:

2011-26-07 Teledyne Continental Motors (TCM) and Rolls-Royce Motors Ltd. (R-RM) Series Reciprocating Engines: Amendment 39-16897; Docket No. FAA-2011-0085; Directorate Identifier 2000-NE-19-AD.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD supersedes AD 2002-13-04, Amendment 39-12792 (67 FR 43230, June 27, 2002).

(c) Applicability

This AD applies to TCM and R-RM C-125, C-145, O-300, IO-360, TSIO-360, and LTSIO-520-AE series reciprocating engines with Champion Aerospace (formerly Unison Industries) Slick Magnetos, models 6314, 6324, and 6364, with magneto serial numbers (S/Ns) of 99110001 through 99129999, inclusive.

(d) Unsafe Condition

This AD was prompted by an error in the previous AD applicability in the range of magneto S/Ns affected, and by the need to include certain engines made by R-RM, under license of TCM. We are issuing this AD to prevent engine failure and loss of control of the airplane due to migration of the magneto impulse coupling stop pin out of the magneto frame and into the gear train of the engine.

(e) Compliance

Comply with this AD within 10 flight hours after the effective date of this AD, unless already done.

(f) Replacement of Magneto

Replace any magneto that has an S/N of 99110001 through 99129999, inclusive, with a magneto that does not have a serial number in that range. If a magneto is not in this S/N range, no further action is required by this AD.

(g) Inspections

Inspect each removed magneto to verify that the impulse coupling stop pin is present. If the pin is missing, do the following:

(1) For C-125, C-145, O-300, IO-360, and TSIO-360 series engines, do the following:

(i) Remove magnetos, alternator or generator, and starter adapter from the accessory case.

(ii) Remove the accessory case from the crankcase and oil sump.

(iii) Visually inspect the entire engine gear train for damaged or broken gears and gear teeth.

(iv) Inspect visible portions of the engine crankcase and accessory case for damage due to the stop pin becoming lodged between the engine gear train and the crankcase or accessory case.

(v) If the accessory case is damaged, repair or replace the accessory case.

(vi) If the engine crankcase is damaged, disassemble the engine, and repair or replace the crankcase.

(vii) Inspect the oil pump drive gear teeth and inner cam gear teeth for damage.

Replace any engine drive train component that has been damaged.

(viii) Replace any damaged gear, and magnaflux the mating gears using the applicable engine overhaul manual.

(2) For LTSIO-520-AE series engines, do the following:

(i) Remove the starter adapter, fuel pump, vacuum pumps, accessory drive pads, and both magnetos.

(ii) Visually inspect the entire engine gear train for damaged or broken gears and gear teeth.

(iii) If any damage has occurred, remove the engine from the airplane, disassemble the engine, and inspect it for damage. If any damage is found, repair as necessary.

(iv) Replace any damaged gear, and magnaflux the mating gears using the applicable engine overhaul manual.

(v) Inspect the interior portions of the engine crankcase for damage due to the stop pin becoming lodged between the gear train and the crankcase. If the crankcase is damaged, repair or replace the crankcase.

(h) Installation Prohibition

After the effective date of this AD, do not install any Champion Aerospace (formerly Unison Industries) Slick magnetos, model 6314, 6324, or 6364 that have an S/N of 99110001 through 99129999, inclusive, on any engine.

(i) Alternative Methods of Compliance

The Manager, Atlanta Aircraft Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

(j) Related Information

(1) A cross-reference for part numbers (P/Ns) for Champion Aerospace (formerly Unison Industries) Slick magneto model 6314 (TCM P/N 653271), model 6324 (TCM P/N 653292), and model 6364 (TCM P/N 649696) can be found in TCM Mandatory Service Bulletin MSB00-6D, dated November 19, 2010.

(2) For more information about this AD, contact Juanita Craft, Aerospace Engineer, Propulsion, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate; 1701 Columbia Avenue, College Park, Georgia, 30337; phone: 404-474-5584; fax: 404-474-5606; e-mail: juanita.craft@faa.gov.

(k) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on December 8, 2011.

Peter A. White,
Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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